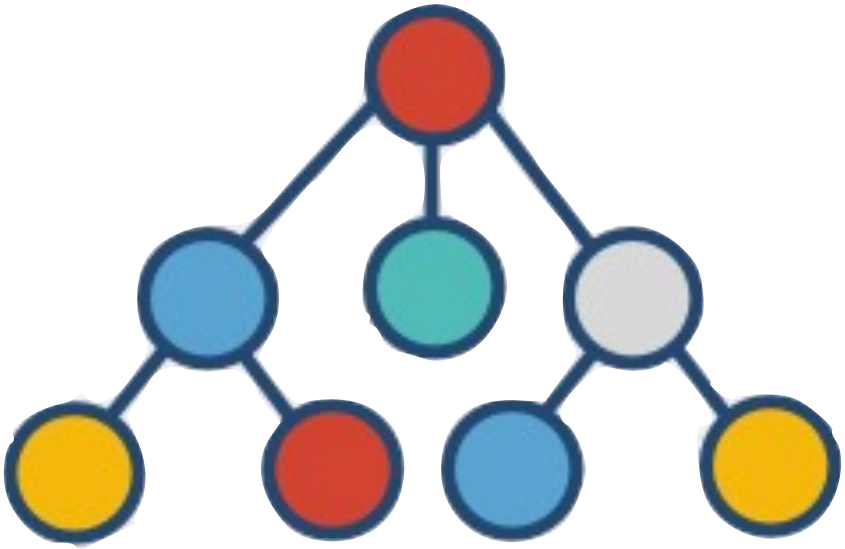
DATA STRUCTURE & ALGORITHMS



(By Prince Agarwal)

[“HELLO WORLD”]

DELETION IN BST

- **BINARY SEARCH TREE (BST)**
  - **HOW TO DELETE A NODE IN BINARY SEARCH TREE**

    There are 3 possibilities when we delete a node from BST

1) Node to be deleted is leaf

Inorder : 20 30 40 50 60 70 80

Inorder : 30 40 50 60 70 80

Hello world

DELETION IN BST

- **BINARY SEARCH TREE (BST)**
  - **HOW TO DELETE A NODE IN BINARY SEARCH TREE**

There are 3 possibilities when we delete a node from BST

2) Node to be deleted has only one child

Copy the child to the node and delete the child

Hello world

DELETION IN BST

- **BINARY SEARCH TREE (BST)**
  - **HOW TO DELETE A NODE IN BINARY SEARCH TREE**

There are 3 possibilities when we delete a node from BST

3) Node to be deleted has two children

Find inorder successor of the node.

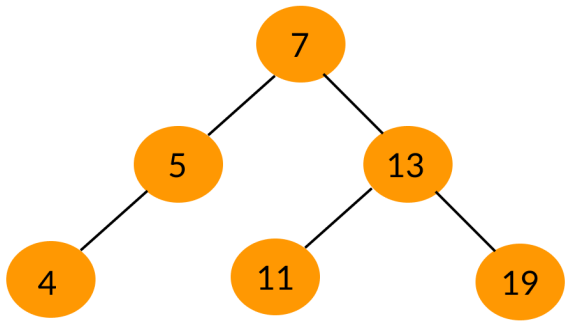
Hello world

DELETION IN BST

- **BINARY SEARCH TREE (BST)**
  - **HOW TO DELETE A NODE IN BINARY SEARCH TREE**

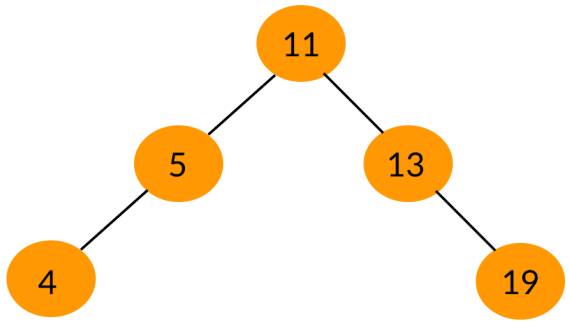
There are 3 possibilities when we delete a node from BST

Before deleting 7



Inorder : 4 5 7 11 13 19

After deleting 7



Inorder : 4 5 11 13 19

Hello world

DELETION IN BST

- **BINARY SEARCH TREE (BST)**

Algorithm to delete a node in a Binary Search Tree

- Input the number of nodes.
- Input the nodes of the tree.
- Consider the first element as the root element and insert all the elements.
- Input the data of the node to be deleted.
- If the node is a leaf node, delete the node directly.
- Else if the node has one child, copy the child to the node to be deleted and delete the child node.
- Else if the node has two children, find the inorder successor of the node.
- Copy the contents of the inorder successor to the node to be deleted and delete the inorder successor.

Hello world